

## ABSTRACT OF THE DISCLOSURE

A method and apparatus for parallel processing of data without the need for cross-communication or synchronization between processing nodes is provided. The system is especially suitable for use in a wafer inspection system for the semiconductor industry. Embodiments include scanning a small area of the wafer, and distributing pixel data among a plurality of processing nodes, each of which accept and process an optimal amount of pixel data independently of the other processing nodes, thereby enabling increased throughput without increasing system complexity.